

15 CENTS

The Technocrats'

Magazine

THIRTY MILLION
OUT OF WORK
IN 1933—
OR
\$20,000 A YEAR
INCOME FOR
EVERY
FAMILY—
WHICH?



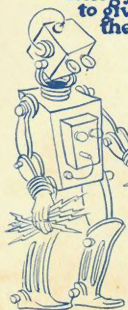
**EXPLAINING TECHNOCRACY
A REVOLUTION WITHOUT BLOODSHED**

The BATTLE of WASHINGTON

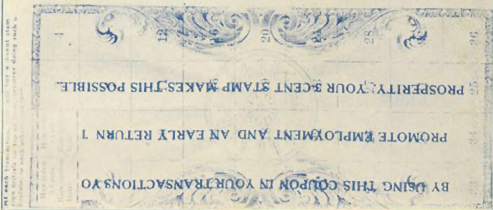
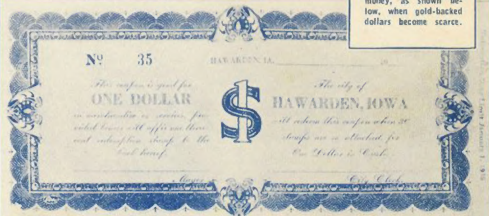


Uncle Sam
hasn't enough gold dollars to satisfy everybody - but the

Technocrat
promises enough "energy dollars" to give everybody the equivalent of \$20,000 a year!



When hunger pinches, thousands of the distressed turn to Washington, as have these restless hunger marchers, in the pitiful hope that money and food will come from a beneficent Uncle Sam. Entire communities sometimes resort to scrip money, as shown below, when gold-backed dollars become scarce.



The "energy dollars" of the Technocrat differ from scrip money in that they are backed by the definitely measurable energy output of men and machines.

Howard Scott

Chief Technocrat

Explains

TECHNOCRACY

THE WORD TECHNOCRACY, as representative of a new body of thought, means government by science. It has no connotation of dictatorship by the technician.

Technocracy is therefore a method of scientific procedure in government.

This continent has no cause for gloom or fear of chaos, but we must face the inconvenience of change.

If the trends of the past century continue at their present rate, this continent will shortly have to decide whether or not it is going to bequeath to its children of today and of the generations to come, a still greater debt load and an ever-increasing unemployment, with the result of a steadily decreasing standard of living for all.

During the two hundred thousand years prior to 1800, the biological progression of man, in his struggle for subsistence on this earth, had advanced so far that the total world population in that year reached the approximate number of 850 millions. During the subsequent 132 years world population has reached 1800 millions. Most of this increase in the human species has been made possible by the social introduction of technology in the machine age.

With the number of unemployed greater than this continent's population of a century ago, with more energy and mineral resources than any like area on the world's surface, we have failed to profit from technological advances, and find ourselves with an economy of plenty existing in the hodgepodge of debt and unemployment.

We stand today on the threshold of a new era of well-being. The high road to this new era can be one of orderly progression under technological control.

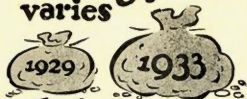
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in our present system is based on



and its value in terms of purchasing power varies



Technocracy would have the currency stand for Energy Units



which machines can create lavishly for everybody



and whose value could not fluctuate

the breadwinner

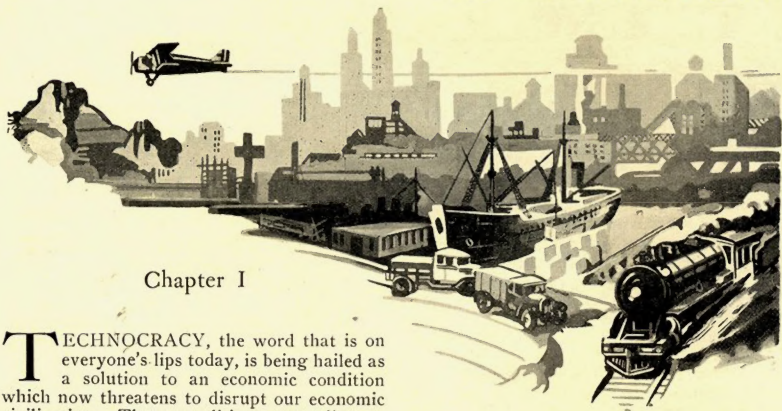
price fluctuations

the producing machines



TECHNOCRACY

A Bloodless



Chapter I

TECHNOCRACY, the word that is on everyone's lips today, is being hailed as a solution to an economic condition which now threatens to disrupt our economic civilization. These conditions, according to the theory of Technocracy, are pointing toward:

- A revolt of the unemployed;**
- Half of population dispossessed of homes;**
- Unemployment doubling and tripling;**
- Debts repudiated.**

This is a startling picture. And yet, figures indicate that unless a vast change is made in the political and economic system of this country we may soon face a collapse of our present social structure, the downfall of currency, and utter chaos taking the place of orderly government.

What are the forces which might bring us to such a pass?

Technocracy now points out why we are coming face to face with ruin unless steps are taken to avert the disasters which threaten America.

Bluntly speaking, Technocrats have declared that the development of machinery is increasing at such a rapid pace that within a few years so many men will have been discharged that the few remaining workers can no longer afford to support the unemployed by charity and the unemployed will arise in revolt to take by

force the necessities of life which they are no longer able to earn by their own efforts.

Up until the past fifty years our methods of social regulation and government sufficed. Now one machine after another has been or is being perfected to take the place of the worker. Huge ditch-digging machines are in operation to take the place of, not a few hundred, but a thousand men at a time.

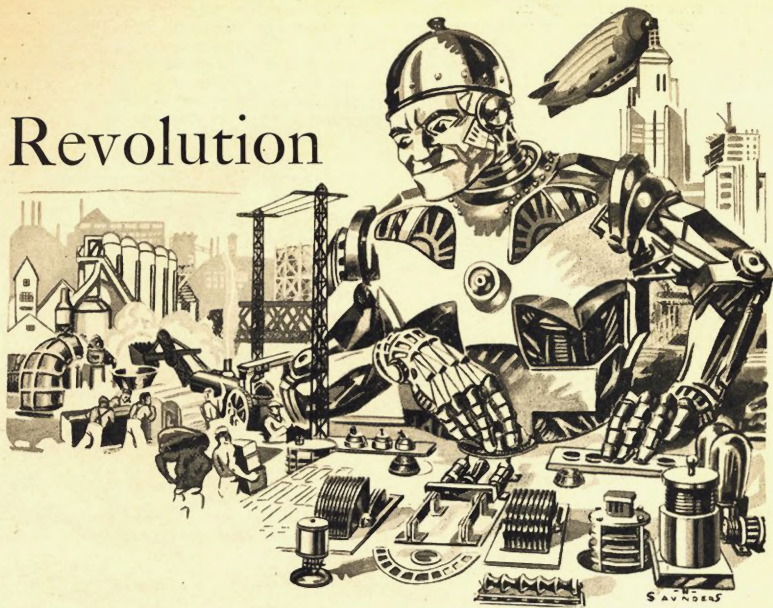
Adding machines, more accurate than human brains and many times faster, have taken the place of bookkeepers and can multiply, divide and subtract in an instant, where hours of labor were formerly involved.

Tractors and gang plows can till a vast farm in a week where a small army of plowmen were formerly employed.

Automatic telephones are displacing telephone operators, as it is possible for all manual labor to be removed from the process of carrying out telephone connections.

Automobiles can be built by a handful of men where ten years ago hundreds were required.

Revolution



An entire home can be assembled and quickly bolted together, replacing the workmen who formerly spent months laying brick, putting on plaster and shingling the roof.

An endless list showing how machinery is displacing man-power could be presented if further proof were needed to show the menace of the machine age upon the present economic system.

It is, however, obvious that it is only a question of time when machines will have displaced so many workers that an entirely new system of providing the people of the earth with a living must be devised.

Technocrats Tackle Problem

OUR economists have been aware of the fact that the next few years must provide a solution to these problems and have been working on various theories for years.

One group of engineers and scientists now known as Technocrats have recently burst upon public consciousness with an outline of

present trends and are charting the march of events to discover, if possible, what can be done to save us from chaos. At the present rate of increasing unemployment, 30,000,000 may be out of work this year! What can be done? Here is a vast, rich country filled to overflowing with products and yet millions of men are going hungry and watching their wives and families suffer from privation.

Factories are filled with clothing, shoes, and luxuries which remain unsold.

Carload upon carload of automobiles await buyers. Billions of bushels of wheat rot in elevators and bale upon bale of cotton is left without a market. Granaries groan with loads of raw foodstuffs, while people starve.

We see armies marching upon Washington demanding relief. Penniless veterans of the World War cry for assistance, knowing not how to extract a living in a country that is overflowing with the wherewithals of life. They ask for bonuses knowing that even this request has an insecure economic foundation

that is at best a makeshift, but a makeshift that may save many from starvation.

We know that a huge array of police officers stands between millions of men and the things they want and must have. As unemployment mounts into more millions, how many more police or soldiers will be needed to stand guard over stores filled with products no one can buy, guarding the fences that surround the overproduction of countless factories?

These are the questions which the Technocrats have tackled.

The Man at the Wheel

AT the head of this group of men is Howard Scott, who, whether madman or genius, has at least served to waken a nation to the peril that confronts it.

Howard Scott has become a legendary figure shrouded in mystery. However, something should be known of the "No. 1 Technocrat" who has focused the attention of thinking people everywhere upon the scheme now called Technocracy.

Scott claims to have been born in Virginia and educated in Europe and is said to hold degrees from three or four universities. For the past ten years he has been quietly working with a growing group of technicians upon the plan which has now burst forth to take the country by storm.

Writing in *The New Outlook*, Wayne W. Parrish says that Scott was the technician in charge of the building of the Muscle Shoals project. "In his earlier years he traveled widely over the world and directed engineering projects in Mexico, Spain and other countries. He is 6' 2", refuses to have a 'doctor' before his name, and has turned down a professorship in order to devote his entire time to the completion of the energy survey."

Those who belittle or decry the scheme known as Technocracy declare that Scott was only a cement mixer at Muscle Shoals and that he was accused of war-time sabotage and dismissed. Doubtless history will find Scott an absorbing character for discussion, but it will give him credit for making the nation conscious of the science of economics.

The Theory of Technocracy

ACTING as a spokesman for all the eminent scientists who are involved in working out a scientific and bloodless "revolution," Scott proposes that some new substitute for the pres-

ent system of employment must be reached.

Since there are too many men for the jobs, obviously jobs should be divided up among everyone capable of working. In order to accomplish such a proposal without turning to Communism or other isms which so far have proven as unsatisfactory as the economic system under which we now suffer, a new foundation must be found.

That foundation, Technocrats claim, can be had in **energy valuation**. Everyone is capable of expending energy whether by brain work or manual labor.

Under the present system we exchange this output of energy in dollars and if no one requires our energy we do not receive dollars to spend for our living.

Instead, then, of obtaining dollars, Technocrats proposed that energy be exchanged for certificates and that all work be divided so that each person has an opportunity to expend energy and obtain certificates entitling him to a share of the country's wealth.

Twenty Thousand Dollars a Year Income for Everyone

UNDER the present price system, which has been in force for 2000 years, wealth is measured in dollars and cents and can be hoarded. One man may be the possessor of a billion dollars and pass this on to his children. Wealth can be accumulated by one man who controls thousands upon thousands of others that rely upon this one man's generosity, judgment and business acumen for a livelihood.

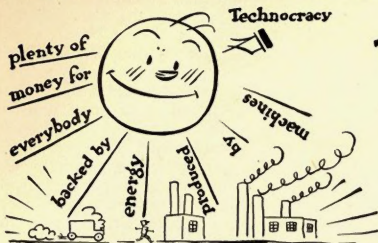
Yet it is obvious that a man with a billion dollars cannot enjoy a meal or a movie any more than a man with a few dollars, and that riches, when they reach a certain excess, are useless.

On the other hand, it will be possible, Technocrats declare, to utilize all the present labor-saving machinery, divide up the work so that if every man labored a little more than six hundred hours a year for twenty years, his efforts would entitle him to an income of approximately \$20,000 a year!

Instead of scrapping machines in the hopes of providing employment, we would increase the number of machines used and thereby earn more and more leisure for everyone. Resources are such that every family could live in luxury..

To many critics of this scheme the whole idea smacks of Communism, but Technocrats declare that Communism is based on the same

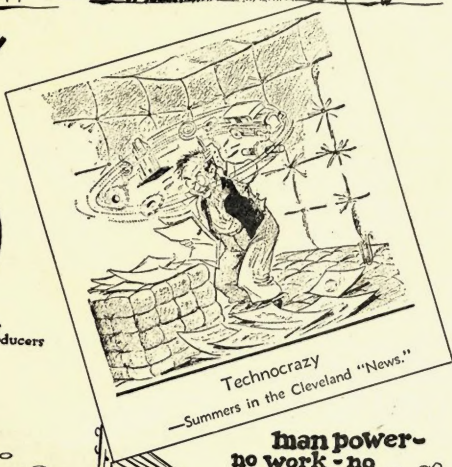
The New Gospel of Technocracy in Cartoon



The sun also rises



The promise



man power -
no work - no
money
no goods

The owners - money
which can't be put to work

old price system, calling for the exchange of money, and that under a new economic system the price system would be abolished.

While it is admitted that no method has as yet been worked out in detail which would provide an entirely satisfactory substitute for the present system, Technocrats have advanced several theories.

One of these ideas is to use energy certificates. These certificates would be used instead of money but would have no value to anyone other than the person whose energy earned the certificates and the certificates would become invalid in a year or two.

This opens up an astounding field of reflection. Imagine a world in which robbers and bandits were eliminated and bootleggers put out of business, kidnappers eliminated and all such members of society thwarted because they would have nothing to steal. Under our present system the government is obliged to pay "to the bearer on demand" a silver dollar on presentation of a certificate to the Treasury. No questions are asked as to how the individ-

ual obtained possession of that dollar certificate other than to attempt to tax the man who owns it. With energy certificates replacing the dollars no thief could rob a man at the point of a gun and then go out and spend his ill-gotten gains since only the true owner of the certificate could spend the certificate and it would have to be spent within the time limit set.

In such a fashion we would also prevent automatically the hoarding of great sums of money and no man would be able to pass on to his children the output of his energy. This would not be necessary since everyone would be assured of an income well in excess of all needs whether the parents were rich or poor, since no longer would we have rich or poor under the system of Technocracy.

Whether we criticize such a plan or not, we must admit that the United States is now in a condition closely bordering upon disaster. The capitalistic system is on the verge of collapse and something must be done to arrest the slide downward into violence and revolt.

AMERICA MUST HELP HERSELF

by HOWARD SCOTT

AMERICA can expect no help in the solution of its problem from any current social theory. What has the world to offer toward such a solution? No European importations of social or political theory can have the slightest value in solving the operational problems facing America today. No theory of social action or governance now existing or proposed in Europe would in any way be endemic to that unique set-up of geologic conformation, technique, equipment, and personnel peculiar to North America.

America stands on the threshold of that new era, but she will have to leave behind all the wish-fulfilling thought and romantic concepts of value that are the concomitants of a price system. So, too, all philosophic approaches to social phenomena, from Plato to Marx, must be avoided. Economics, that pathology of debt, must likewise be discarded with the other historical antiquities.

Technology has introduced a new methodology in the creation of physical wealth. It is now able to substitute energy for the man hours on the parity basis that 1,500,000 foot pounds equals one man's time for eight hours. National income under the price system consists of the debt claims accruing annually from the certificates of debt already extant. Physical income within a continental area under technological control would be the net available energy in ergs, converted into use-forms and services over and above the operation and maintenance of physical equipment and structures of the area.

Individual income under technological control would consist of units commensurate with the quanta by which the rate of flow of the physical equipment is measured throughout the continent.

Any system of value under a price system is a certification of debt. Any unit of measurement under technological control would be a certification of available energy converted. Such units of certification would have validity only during the balance load period for which they were issued.

Technocracy proposes no solution—it merely poses the problem raised by the technological introduction of energy factors in a modern industrial social mechanism. Continental America possesses all the essential qualifications for such a mechanism—sufficient energy and mineral resources, adequate water precipitation, more than enough arable land of proper chemical stability, highly developed technological facilities backed by a trained personnel, powerful research organizations. All these things are entirely sufficient to assure the continuance of a high energy standard of livelihood for at least a thousand years, if they are operated on a non-price basis with the technological means known at present.

America stands now at the crossroads, confronting the dilemma of alternatives. The progression of a modern industrial social mechanism is unidirectional and irreversible. Physically this continental area has no choice but to proceed with the further elimination of toil through the substitution of energy for man hours.

MISERY—SQUALOR—EVICTION



CHICAGO



NEW YORK

Thirty families evicted from tenements in the Bronx, New York, who were thrust unceremoniously with their belongings into the street, were aided by 2,000 sympathizers who hurled missiles at police from windows and fire escapes. Photo shows belongings piled in street.

—OR Wealth for All?



LOS ANGELES

Housekeeping in the streets—a symbol of what the unemployed are coming to? Such scenes are becoming common in large cities.

The Machine Produces
TOO MUCH — but these !
people have **TOO LITTLE.**
CAN THE TECHNOCRAT HELP?

The Price System Doomed?

FOURTEEN million men out of work beginning with the year 1933 are wondering if it will require a bloody revolution to give them the living they are willing to earn. They know that money is at the root of all the evil which confronts them and it is not surprising, then, that one of the sharpest swords in the hands of the Technocrats strikes at this evil.

Money as a medium of exchange is subject to fluctuating values, can be hoarded, can be passed on by inheritance, and is subject to a vast number of disadvantages which are abhorred by the Technocrats.

What substitute can be made which will overcome the disadvantages of the price system? First, let us consider the disadvantages from a standpoint of the theory of Technocracy.

The Vicious Circle

IN the first place the price system involves debts. The capitalistic price system requires that money be borrowed in order to produce goods. The consumer is the one who has lent money to the producer. When a stockholder puts the money he has earned from the original expenditure of his energy into a factory or railroad or oil well, he is lending money at interest. The manufacturer then proceeds to produce goods to pay for the money borrowed. This interest on the money borrowed mounts up at a rapid rate and the producer must turn out an increasing amount of produce to pay for the money which he has borrowed.

The next step in this vicious circle comes when the producer loses markets in this country or in the world market and has to cut down the cost of his product in order to earn enough money to pay for the interest on his borrowings. New machinery is used to increase the efficiency of the plant. For a long time it was possible to give employment to men building this machinery but the time comes when the man released through the invention of one machine cannot find a job in another field.

The next step in the circle comes when the

producer has cut wages, done away with labor, and taken many other steps to reduce the cost of his product in order to pay interest on his borrowings. It then becomes evident that the consumer has not the money to buy the product!

Finally we reach the stage where the producer has turned out a large amount of goods but because he has thrown so many men out of work trying to reduce the cost of this product he can find no one to buy it.

At this stage the entire system collapses.

The producer has borrowed money and must pay for the money with interest. If he cannot pay he must go broke. When he goes broke the stock in his company is worthless and the bank which owns some of his stock and the consumers who own some of it, lose their income. Like a house of cards, failures fall fast upon failures. The company goes into bankruptcy, the bank fails, the depositors have no money to buy goods with, another company which depends upon these people to buy goods fails and so on until the collapse is general.

Devices to Prevent Disaster

MANY devices have been tried out to forestall this disaster. The government sets up a reserve. Debt moratoriums are declared and emergency measures taken to halt failures.

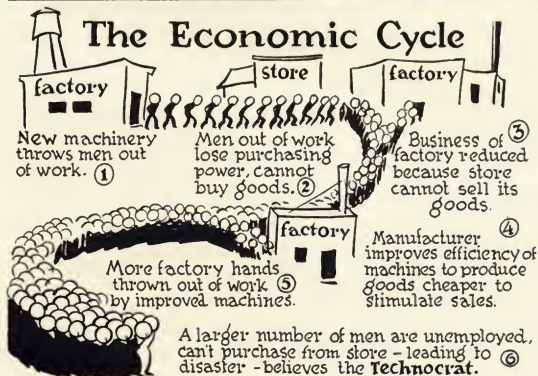
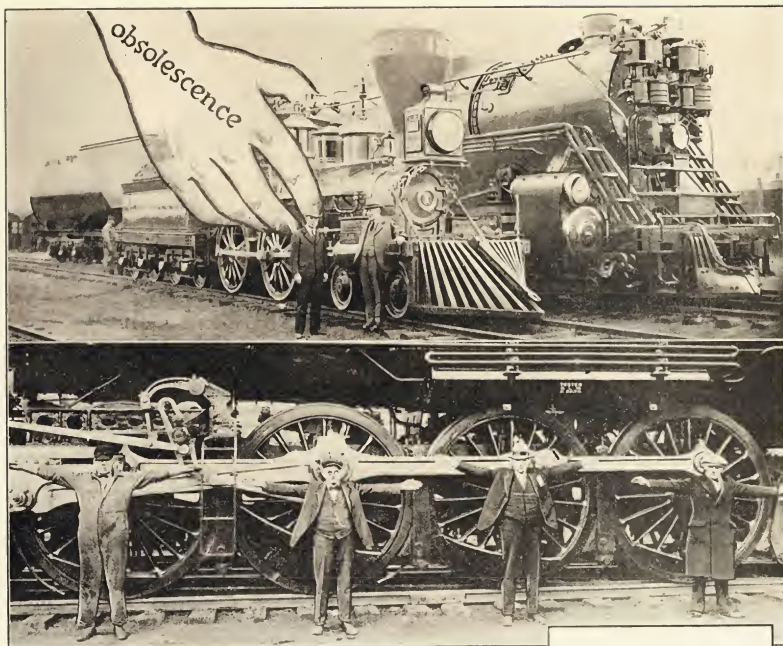
All this would be unnecessary, Technocrats declare, if the price system were abolished.

It is true that we have gone into many panics and depressions, each one more complicated and serious than the one preceding.

It is declared that renunciation of debts through bankruptcy, through failures or through moratoriums can stem the tide of depression but such a method is obviously faulty. It works tremendous hardships upon everyone and is, from a scientific point of view, ridiculous.

Economists and scientists have pointed out for years the fallacies of such a system and we know that there will always be depressions and panics following boom times unless some new economic system is devised.

We Pay for Machines Long After They're Junked



Both the locomotives shown in the above picture are in fine running order—but the smaller engine, built some 50 years ago, is unusable because it is obsolete. Technocrats point out that the monster locomotive shown alongside its smaller but older brother will likewise be obsolete in a few years—ten or twelve at the most, considering how rapidly technical advances come. Yet the bonds issued to get funds to build the big engine will draw interest for 80 years, and at the end of that time the face value of the bonds must be repaid—70 years after the locomotive is junked! Technocracy believes that the vast pyramiding of debt has outrun the country's income by fantastic leaps and bounds, and that the top-heavy structure must soon topple of its own weight.

The System of Technocracy

IF we are to replace the price system with another system, then Technocrats propose that a scientific basis of exchange be employed.

This new system could very well be based upon a measurement of energy and the exchange of energy for produce. This is called the theory of energy determinants and is based upon "the Energy Survey of North America" which has been going on for ten years under the supervision of Howard Scott. Scientifically, all energy can be measured. The units of measurement are expressed in horsepower, calories, footpounds, ergs, and other terminology employed in physics.

The energy produced by a ton of coal can be scientifically measured and will not vary. The energy produced by waterfall can be measured accurately and it is known that a certain amount of water pressure will produce a certain amount of energy.

On the other hand, a dollar bill fluctuates in value and the prices of commodities go up and down so that no one knows today what the price of a commodity will be tomorrow. If we use energy as a basis of exchange, these fluctuations will be avoided and we shall get down to bedrock in measuring our wealth. In other words, we always know the energy contained in a gallon of gasoline but we never know from one week to the next how much coin will have to be spent to obtain that gallon of gasoline.

A way can be found scientifically to measure the energy value of a man from the point of

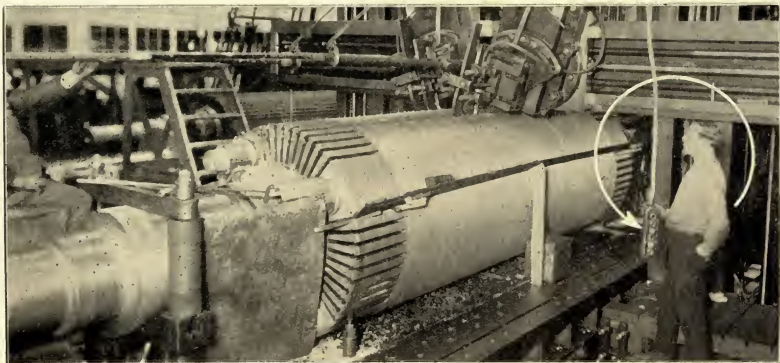
view of physical or mental labor instead of dollars and cents that will be at least more equitable than the present system. Where now a man may be clever and capable and yet receive a fraction of the income of a man only a fraction as intelligent, the new system would equalize the reward.

This is probably one of the most attractive angles of Technocracy. Men hate injustice more than anything else and injustice and unfairness have resulted in many revolutions. Probably the United States today would be still a colony of Great Britain, had it not been for unjust taxation without representation. France might still be a Monocracy, as is England, if the common people had not resented a system which kept them in abject poverty while the nobility rolled in wealth.

Technocracy, therefore, reaches into the very fundamentals of the makeup of mankind when it proposes scientifically to eliminate the injustices practiced under the present system.

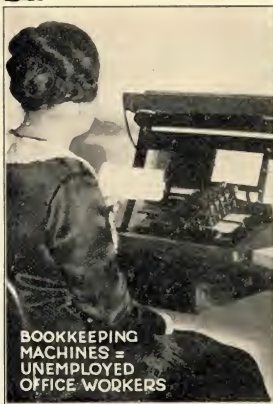
Of course, if Technocracy threatens to destroy individualism or the spread of progress it will be rejected.

America is a nation of intense individualists and any plan which prevents the individual from exercising his ambition to succeed would be doomed to failure. This is one of the most difficult problems which Technocracy would have to work out but Technocrats declare that it can be done by rewarding the expenditure of energy with energy certificates, the exchange of which could be enjoyed by that individual winning extra recognition during his lifetime.

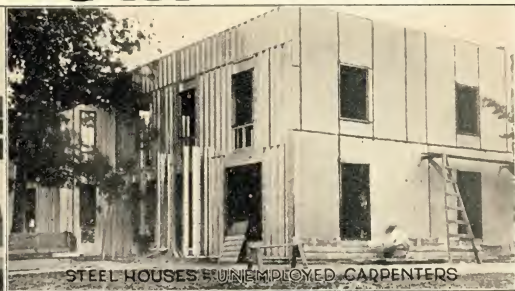


Less and less human labor is needed even to produce machines. One man at a switchboard controls this manufacturing process.

the producing machine (the threat) the Unemployed (the danger) (the signal)



BOOKKEEPING MACHINES = UNEMPLOYED OFFICE WORKERS



STEEL HOUSES = UNEMPLOYED CARPENTERS



AUTOMATIC CAR LOADERS = UNEMPLOYED STEVEDORES

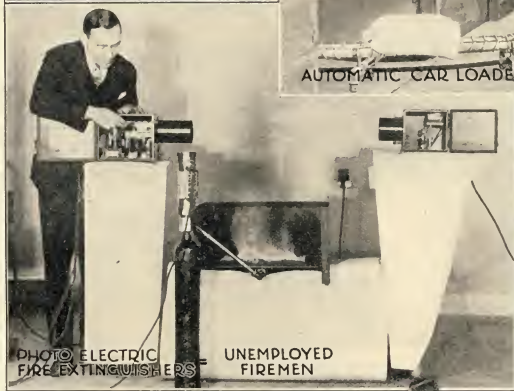


PHOTO ELECTRIC FIRE EXTINGUISHERS = UNEMPLOYED FIREMEN



POWER LOOMS = UNEMPLOYED RUG MAKERS



SELF SERVE VENDING MACHINES = UNEMPLOYED CLERKS

Secret Inventions Which Could Ruin Industry

TODAY we live in an age of amazing progress yet undermining all the benefits of invention is the fear of machinery.

No one knows when he may be thrown out of a job by a new machine.

This is no new problem to be faced by the working man. For years we have lived in fear of the very machinery we were creating. As soon as laborers first discovered that machinery was throwing them out of work the great battle started, and it will not end until civilized mankind has invented a new system of social government and economics which will do away with the fear of losing jobs through machinery.

When the factory system first went into effect in England, dispossessed workers desperately fought to smash machinery in a futile battle against the encroachment of the machine age. That battle still goes on.

In the course of time laborers formed themselves into Unions, primarily to guard them against the encroachments of machinery. We find Unions setting forth in minute detail just exactly what each worker is entitled to produce and earn, and a thousand make-shift methods are employed to hold production down to the point where the demand for a product can be maintained by making that product scarce.

As time goes on the worker learns that the machine cannot be whipped.

Why then cannot a new deal be made whereby instead of holding back, we push our machinery to the utmost and enjoy the leisure that machines have given us? Why should we fight machinery when under the system of Technocracy we could make machines do more and more of our work so that we would have more and more leisure to enjoy life?

These are questions proposed by the opponents of Technocracy. The answer must be given eventually. "Why," say the Techno-

crats, "should we not face the facts and reach a satisfactory conclusion without further delay?"

Who Will Lose His Job Next?

UNDER the present system not only is the future of each individual job holder uncertain but we are also faced with the problem of what to do with the unemployed.

We live in as much fear of the unemployed as we do of the machines that cause their unemployment.

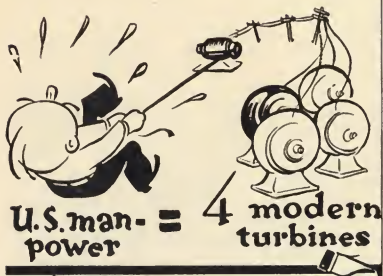
How soon will the day arrive when the workers can no longer afford to pay the taxes and support the charities which take care of the unemployed? Even today we find landlords fearful of removing tenants who cannot pay their rent. We are afraid of pushing the unemployed to a point where they may rise against us. At the same time jobless men are staging demonstrations in every large city, demanding a chance to earn a living.

It is, as we have pointed out, impossible to predict when a new machine will come along to throw another class of workmen out of jobs. Women who find employment as stenographers may sometimes wonder what would happen if a machine were put on the market that could be made so cheaply as to replace their efforts at the typewriter. Newspaper employees wonder what would happen if news gathering sources were consolidated and broadcast over radios. Factory workers fear the day when one man pushing a button can control all the machinery in a plant.

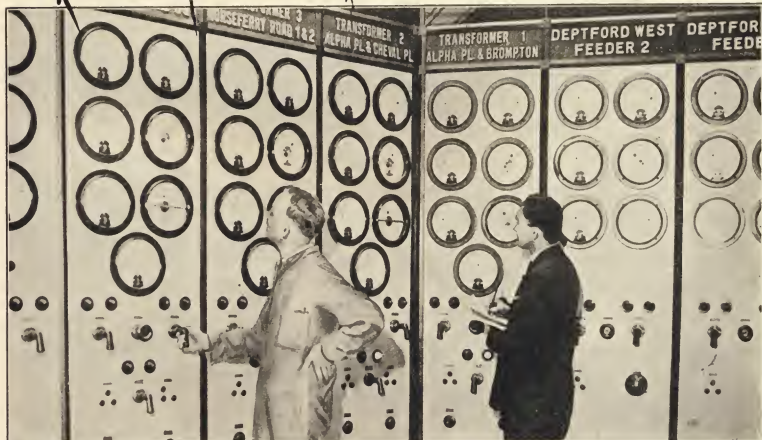
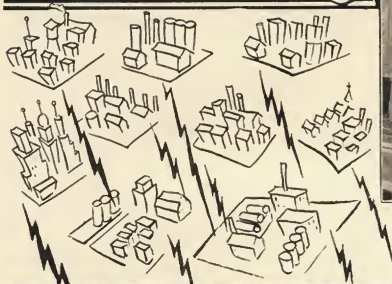
Obviously a civilization which suffers continually from fear of progress cannot endure. Eventually the day must arrive when, instead of fearing each new invention, mankind will welcome it as another addition to his leisure and as a means of increasing his happiness.

Technocracy holds out hope of a solution for these problems.

Puny Man-Power Can't Compete With Machine



Four modern turbines like that above, of 300,000 kilowatt hour capacity, running 24 hours a day, generate as much power as is produced by every adult worker in the United States. Technocracy would distribute the energy output of such machines for the benefit of man—not in competition.



These two men control the huge Battersea Station of the London Power Company which furnishes current for scores of suburbs clustered around the city. Nerve centers like this, requiring only one or two human brains in control, illustrate the Technocrat's theories on the relationship between men, money and energy. Such plants are duplicated in all large communities.

Withholding Scientific Discoveries

IT is hard to believe that in this advanced and scientific age, where competition is keen to introduce labor saving devices that scientific discoveries would be withheld.

Our system, however, is such that if some of the known inventions were to be released, only chaos could result. Within a few years great organizations and huge industries would utterly collapse. Think of what might happen if—

**Our automobiles would last forty years;
Razor blades would last a lifetime;
Clothing didn't wear out.**

These are only a few of the inventions which are withheld for fear of what might happen. Our system of barter and trade depends entirely upon replacing outworn products and if the rate of replacement is upset the entire economic structure is upset.

If each man possessed a razor blade which would last a lifetime, what would happen to the razor blade factories? In a couple of years they would have produced enough of the new type of razor blade to last the country for a generation and then another horde of workers would be thrown out of jobs.

Nonetheless, Technocrats declare that a razor blade such as this has been perfected, with a tungsten carbide edge on a steel wafer base—a blade that would keep its edge for a lifetime—and costing only thirty cents! To place such a blade on the market would be utterly demoralizing.

Television to Replace Theaters

IT has been known for some-time that a television set has been perfected which would easily empty the theaters of the country and wreck one of our largest industries.

This set could be installed in the home on a rental basis for a few dollars. Three or four central broadcasting stations strung across the country could broadcast an entire motion picture with sound effects, and the family, without leaving the house, could enjoy all the entertainment now obtained in the theater. Imagine, if you can, what would happen!

Buildings costing billions would be rendered useless. Thousands upon thousands would be thrown out of work and yet if it were not for the fact that we depend upon earnings measured in dollars, society could enjoy this tremendous benefit. Obviously with the motion picture industry so closely amalgamated with the theater industry, it would be suicide

for this great industry to place such a device on the market.

Technocrats have explained also how automobiles could be manufactured which would last forty years. To put such an automobile on the market would in a few years reduce the great automobile industry to a skeleton of its former self. These automobiles are no figments of imagination, but could be economically produced and could function efficiently for 350,000 miles. Constructed of rustless steel and frictionless bearings, individual wheel suspension and boat type bottom, this new type of automobile would last the ordinary car owner a lifetime. But without replacements the life blood of trade is so radically reduced that the automobile industry would totter and collapse after supplying the cars needed.

It is commonly known that rayon was withheld from the market for twenty years through fear of what would result when this invention was released. This cheap substitute for silk is now a commonly accepted product. It was only released because it provided more work and effected only a temporary hardship upon silk manufacturers. Those who depended upon the manufacture of silk could substitute rayon and survive.

A Substitute for Wool

BUT what would happen to the gasoline industry if the new secret formula for producing gasoline cheaply from corn were to be disclosed? Think of the disaster to our oil wells and refineries!

Or what would happen to the clothing industry if the fiber plant called "ramie" were to be used instead of wool and cotton?

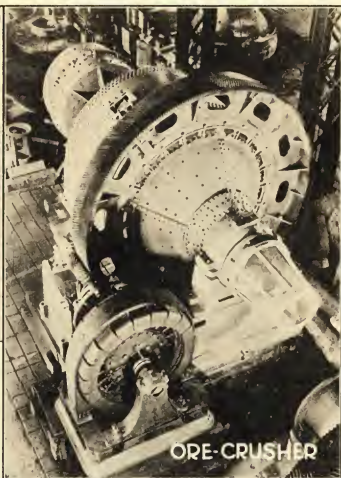
Ramie is a fibrous metal plant which can make not only clothing but paper and other products. It can be planted and cultivated easily and on land that would raise one hundred and fifty pounds of cotton, fifteen hundred pounds of ramie could be grown. From this raw material can be made clothing of remarkable wearing capacity which would take dyes and which has a lustre and attractiveness that render it adaptable in every way to clothing purposes.

Its use as paper would give us a product that is so strong it cannot be torn by human hands and yet it would be cheaper than wood pulp. Two or three crops a year could be obtained. Seven times stronger than wool, ramie has an added advantage in that it is also stronger wet than dry.

Yet what would happen to the clothing industry if we wore clothes which lasted seven times as



MOTOR-POWERED SAW



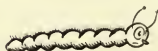
ORE-CRUSHER

Battles within Industries



railroads

vs. barge lines pipe lines trucks



silk



vs.

rayon



boxmakers



vs.

cellophane

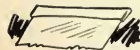


matches

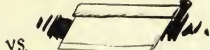


vs.

renewable match cigarette lighter



razor blade



vs.

razor blade with indestructible edge



present-day auto



vs.

automobile capable of traveling 250,000 miles without overhauling.



20 TONS AT ONE BITE

Huge and substantial though an industry may be, it can be done to death overnight by some new invention. Just as the photographs show how woodsmen, ore crushers, and ditch diggers have been put out of work, so does the drawing show how certain recent developments have threatened entire industries. Many revolutionary inventions are withheld from fear of consequences.

long as the clothes we now wear? With more clothes on hand now than the people can afford to buy, obviously a product which would require even less replacement is not to be thought of in present economic conditions.

We must be deprived, because of our outworn economic system, of still another boon to mankind.

Technocrats claim they could supply waterproof leather shoes guaranteed to wear two and one-half years. Right now machinery in this country can produce shoes at a rate so much faster than anyone can wear them out that the shoe industry is suffering from overproduction as much as any other industry. And how could the shoe manufacturers contemplate with equanimity a product which would last ten times as long as the ordinary product?

Even with replacements we must change styles and set up new fads in order to hasten replacement of clothing. Actually the clothing in a person's wardrobe today goes out of style faster than it wears out—another device to increase the necessity for replacement.

Technocrats tell of a machine which could lay a road pavement sixty feet wide at the rate of eight miles a day with a crew of six working in eight hour shifts.

If such a machine were put into operation think of the laborers thrown out of work. And yet no one enjoys labor when it means long hours of tedious toil and aching muscles.

Despite the fact that machinery saves us this torture we are afraid to use it!

In one city men were given shovels, and machinery put away so as to make more work. The same makeshift solution to economic difficulties is going on in many States where the lot of mankind is deliberately made more hard in order to adjust man to an outworn system.

Under Technocracy we would not only use machines and inventions but we would welcome them, and the dull torture of labor would be minimized and reduced as each new machine came into use.

Photo-Electric Cells

RECENTLY a new invention has been brought out which may further revolutionize industry as its uses are developed. This is the photo-electric cell. By means of this mechanism a person can drive up to his garage and the garage doors will open and close after him. When a beam of light from the headlights falls upon the cell electric contacts are made and machinery set in operation. Apply-

ing this principal to factories it is possible for a man to sit at his desk in one city and operate a plant in another city merely by pushing buttons.

One such factory already mentioned, located in New Jersey produces rayon. Everything is automatic even to the setting of the color of the dyes that go into the vats.

Electricity has been man's servant for many years, and in thousands of ways. But it has been a servant without a brain. The photo-electric cell furnishes that brain.

The tremendous power of rushing waterfalls has been converted into electricity and sent in this form of energy across miles of high-power lines through city after city, year after year. In each city a portion of this power could be tapped and converted and re-converted into other forms of energy; into heat for cooking, into whirring wheels urged on by electric motors. Every energy function of the human body could be duplicated by electricity except the one function of judgment, of discrimination—the power to say "yes" or "no" or "stop" or "go."

Now the photo-electric cell has been introduced, and it can do that very thing which heretofore has kept electricity a dumb, tiresome servant.

The photo-electric cell can say "yes" or "no" or "stop" and "go"—it can tell the difference between colors of beer in a brewery and scrap all the brew that does not come up to standard. It can stop the production of a plant in the twinkling of an eye by its amazing sensitivity, automatic in accuracy.

A Robot Inspector

THINK of the number of inspectors the photo-electric cell will throw out of work!

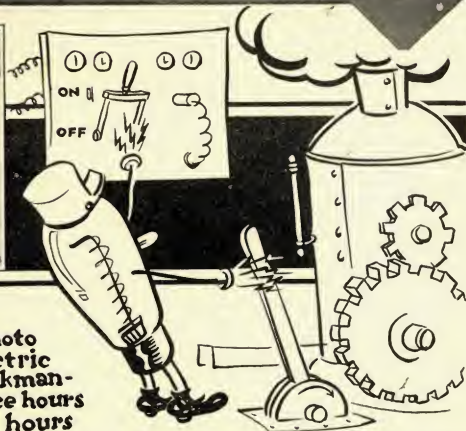
There have been factories built which were entirely automatic except for men who passed upon the quality of the work turned out. Even then, human error in discernment and judgment was ever present.

Now the photo-electric cell can shut down a plant to a dead stop in a fraction of a second, before another single unit of inferior grade has been manufactured.

This merciless automatism is justifiable, say the Technocrats. Why not? Errorless manufacture is effected at a pace which would kill thousands of sweating souls were they to attempt to maintain that pace, and this is done at a fraction of the cost of human labor! Progress!

But instead of adhering to an outmoded

Photo Cell Gives a BRAIN to Machines



**photo
electric
workman-
office hours
24 hours
a day**

Top picture shows how photo-electric cell inspects yeast cakes for proper wrapping; middle photo, photo cell inspecting paper being manufactured; lower picture, photo cell apparatus which turns on lights when dusk falls.

currency based on human labor involved in the output of gold, the Technocrats would have us use a medium of exchange based upon the energy output of men controlling machines. Perhaps they are right.

Certainly it is fearful to realize that electricity—a giant of fifty years growth—coddled and understood and educated until it approaches the human body in its adaptability to work at various tasks, literally with tireless muscles and limitless power, has at last been given a brain so sensitive it can tell the difference between the weight of a fleck of dust or a ten-ton airplane. It can weigh, measure, select and divide. Electricity has been reborn through the introduction of the photo-electric cell, and this within the past three years.

Already mail is being sorted in Cleveland post offices without the aid of the human mind.

Cold storage plants are rejecting old and stale eggs before committing these farm products to the cold vaults.

Ships are being steered by the photo-electric cell.

Trains are being despatched, positively and without possibility of error.

City lights are turned on when the sun gets so low that it is necessary. No time clock arrangement, this. One day it may be 7 p. m. Next day there may be clouds and smoke or fog. The photo-electric cell turns on the city lights automatically when darkness comes on.

Elevators are being run without human guidance, and are automatically leveled off by the photo cell mechanism. Just punch a button—the photo cell does the rest.

Everywhere the machine is intruding itself—the pace has been greater the last three years than in the preceding twenty years. We used to consider the technical progress of the opening two decades of the Twentieth Century with awe. Miraculous! Just think of what machines were doing! And yet since the depression and the perfection and release of that one little item—the photo-electric cell—all of the machinery of the past twenty years has been given a brain to make it self-operating, not only starting itself but shutting itself off when there was no more work, or when things were going wrong.

Behind all this change is the little machine which looks like a bottle, fragile as a light globe, but which has the power to automatically control everything from human speech to the titanic coursing of a mammoth steamship.

Desperate Plight of Unemployed

NO matter how much we argue Technocracy pro and con the fact remains that millions are out of work and must be taken care of if we are to avert chaos.

Always the Technocrat falls back on this argument: "Here are millions out of work and their number increasing day by day—if nothing is done about it what will happen when there are more men out of work than we can afford to support?"

Technocrats are not claiming a panacea but assert that their idea at least would solve unemployment.

Riots and demonstrations of the unemployed are taking place in every large city of the country. In Washington last year we had the Bonus army seeking aid for unemployed veterans and the whole country was amazed at the extent of their suffering. It required the uniformed forces of the government to evict the Bonus army amid scenes of violence and bloodshed.

In Detroit, the world center of the automobile industry, four men were killed and fifty wounded in the spring of 1932, when the worst riot of the depression occurred. Thousands of men staged a demonstration at the River Rouge plant of the Ford Motor Company.

The situation in Chicago is particularly desperate, where the city has been ravaged by organized crime and the corruption in politics for years and the overproduction of goods has brought the city's industries almost to a standstill. Bank failures occurred left and right with one structure after another going down like rows of card houses.

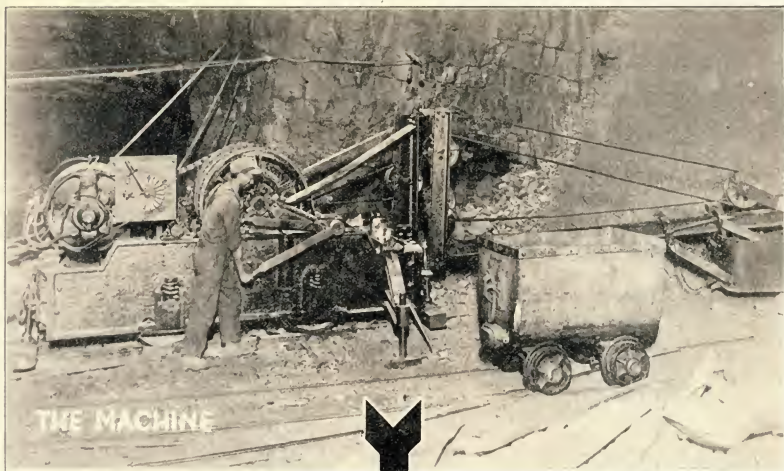
Thousands upon thousands of families, upon losing their jobs, threw their belongings into their cars and headed for California, with the result that Los Angeles is one of the centers of unemployment.

The picture is indeed dismal but is not without hope.

Economists point out that the last six months of 1932 showed very little further decline, with business scraping bottom but going no lower, and if previous depressions are any criterion, the year 1933 should see the end of this one.

If we learn a lesson from Technocrats it will be this: America must devise some way of preventing further unemployment and find a way to level off the ups and downs of industry which bring suffering and want to the common people.

HOW MACHINES BREED INDUSTRIAL WAR



The Machine—Mechanical shovel in use in mine; The War—National Guard protecting Illinois mine from attacks of unemployed miners. Men will always fight for the right to earn a living for their families; Technocracy would simplify the job.

Technocracy's Effect On Society

IN propounding the value of a government under Technocracy, we are brought face to face with the question: "How would it affect our personal affairs?"

After all, we are chiefly interested in the personal advantages that would arise in a new social system. Leaving to scientists the solution of economic problems such as the introduction of the new system of energy certificates in place of money and the new division of labor and wealth, let us consider the human equation.

What, for instance, would the effect of Technocracy be upon marriage? How can an individual be rewarded for superior ability? Would servants be replaced by machines? What would be woman's place in Technocracy?

All these are questions that have not yet been answered by Technocrats, although we are given to understand that the Technocrats are preparing an answer.

For one thing, it is easy to say that a more accurate division of wealth, giving everyone a fair and equal chance to earn a living, would have the effect of lifting the present widespread economic ban on marriage.

It is well known that one of the great moral problems of the day centers about the inability of the young man and woman to adjust their physical urge to marry with the lack of economic opportunity.

With every young man given his share of work to do and his share of the world's goods, we would remove with one sweep the present obstacles which keep him from marriage long after he is ready for it.

Trial marriages, companionate marriages and other makeshift arrangements which have been suggested because young people have not the money to get married, would not be necessary. Those who are trying to find a way out of the wilderness, believing that the morals of our young people are greatly endangered because illicit relationships are taking the place

of legal marriages, would find the problem solved by Technocracy.

Woman's Place in Technocracy

ON the other hand, maybe women will not care to give up their independence and assume the responsibilities of family life if under Technocracy everyone is assured of a luxurious living scale.

In answer to that we can take into account human nature which, in spite of Technocracy or despite the lack of it, still urges young men and women to marry. No new system can abolish love!

Critics of the idea of Technocracy foresee race suicide if all classes of people are raised to a high standard of living and education. It is well known that birth rates have declined alarmingly in the last fifty years and that the educated classes are restricting their offspring. Raising standards of all classes may have an important bearing on the birth rate.

Possibly scientists working out these phases of Technocracy would offer a premium for families, just as Italy is doing now.

Housewives, naturally interested in the problem of domestic help, would view with great alarm any plan which would deprive them of servants. Here we can imagine how the Technocralogical system would be applied to grade and classify all human beings so that some would be factory workers, some domestic workers, some secretaries and so on. Probably the eventual plan would call for community kitchens and neighborhood nurses. In some communities, a central cooking and heating plant has been worked out with great success. Food is cooked and transported to the house where it is served and underground pipes carry heat to the radiators, while student nurses take care of the children during the hours when the mother desires recreation. It is not hard to visualize a future in which liv-

What is a dollar? What is an erg?

Technocracy
in a
nutshell

- ① In the phrase "Life, Liberty, and the Pursuit of Happiness" the framers of the U. S. Constitution summed up what experience had proved a government should guarantee its citizens.



- ② To promote Life, Liberty, and the Pursuit of Happiness, they invented a medium of exchange taking as its standard the fixed amount of labor needed to produce gold from the earth, assuming that the existing gold supply was a result of this labor unit and that the supply would not change much.

oh yeah?
-well

Here's the prospector and his burro—the original gold-producing labor unit.

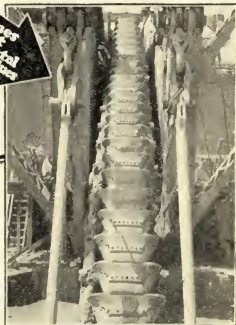


- ③ The prospector knew how much effort was needed to pan a certain number of grains of gold (called a dollar). The farmer knew how much wheat he would exchange for those grains of gold, which he could use to trade with the merchant, who bought from the manufacturer who borrowed from the banker, and so on. Thus values were set until the average person lost sight of what a dollar really is. With the advent of machines

Gigantic Counterfeiting of values sets in - say Technocrats

- ④ Machines have produced out of economic adjustment with our supposed fundamental values. Even the machine at the right, a gold dredge, has supplanted the gold-panning prospector until the original gold-producing unit has changed from a man into a machine. Technocrats believe the machine has counterfeited wealth in thousands of subtle forms until the real is indistinguishable from the spurious. Technocrats want a dollar measured in "erg tokens" (based on energy output of machines) which is in effect a sort of tax levied on machines to enable man to live in comparative leisure.

machines supplant fundamental system of values



an erg is a unit of work that -

1 erg = 1/981 of a gram weight moved 1 centimeter.
1 erg = 10,000,000 Joules — 1 Joule = 1 watt per sec.
746 watts = 1 horsepower = 33,000 lbs. moved 1 ft. in 1 min.

can be applied to machines as well as men

An "erg" is the technical name for the lowest unit of energy output. As shown in this drawing, Technocrats would substitute this energy valuation for the gold basis which backs our present dollar. An "energy dollar" or "erg token" would have to be spent at once, could not be saved. It's the standard on which the dollar is based that counts, not terminology used to describe it.

ing arrangements are thus efficiently and economically worked out.

Technocracy and Love

SUPPOSE a Technocratic state should be set up in this country and all the wealth shared equally, how could one man prove his ability?

In debates on this subject, men have put forth the question: "If the wealth was equally divided wouldn't the unattractive man have difficulty in winning a mate?"

It is not so difficult to answer that question if the good of society were considered, because marriages in which the sole attraction is superior wealth aren't inclined to work out. It is doubtful if there is a real problem here since Technocrats, in the first place, would reward the man of outstanding ability and ambition and the system, as outlined at present, sets a minimum standard of living, but does not set a rigid limitation. The leeway between minimum and maximum might be considerable despite the fact that energy certificates cannot be hoarded.

A greater emphasis would be placed upon the social worth of an individual and less upon financial worth so that those who contributed largely to the social and intellectual welfare of the community would be given greater recognition.

It also seems to be human nature that the homely man does not always have to be satisfied with a homely woman and that personal pulchritude is not the deciding factor in love. Nor do all men desire the same woman. While there is competition for outstanding beauty, it does not necessarily follow that the handsomest man will win her.

Technocracy should not therefore be criticized from the point of view of romance, but on the other hand it offers an advantage in making marriage easier.

An End to Crime

THE effect of Technocracological government upon crime has been briefly touched upon before and is worthy of further remark.

One of the penalties of the present price system and economic arrangement is the increase of organized crime. An astounding proportion of the population is engaged in making a living from thievery, extortion, kidnapping, smuggling, bootlegging and corruption in politics.

Crime is very efficiently organized. Bank robbers operate extensively with operations planned on a huge scale, an organization in-

volving methods of getting, transporting and disposing of stolen bonds, and so on.

It is well known that large scale operations of bootleggers are common, with crime monarchs set up like Capone and his assistants, who direct the transporting and selling of liquor, corrupt politicians, and work as an armed unit under a dictatorship of violence.

What would happen to organized crime under Technocracy?

Under Technocracy, criminals would have few incentives to crime other than the natural outburst of violence which mankind is heir to.

In the first place, should we reject the price system and substitute energy certificates, the criminal would be deprived of his most valued loot. Since certificates cannot be hoarded and would be non-transferable there would be no incentive to rob. We might find a crook pointing a gun at a man to steal his available source of energy certificates, but if these certificates are made non-transferable, how can the bandit cash in on his crime? Furthermore, if the criminal-minded already had been supplied with an income ample for his needs, there would be no incentive to crime. Poverty is the inciting factor and poverty would be done away with. Of course, some men would have more than others due to their ability. Possibly their wives would have jewelry which others might covet. And we know that mankind can never be cured entirely of occasional lapses into violence, particularly where sex jealousy and greed is concerned.

Nonetheless, it seems possible that a greater share of crime would be eradicated. Fifty or one hundred years hence, if a scientific system should be set up, we might look in vain for such present day evils as kidnapping, prostitution, and robbery.

At this time we can only conjecture on the details of Technological state. How can a man's worth in energy be measured? How can a man's effort and initiative be judged? These are questions which will have to be answered satisfactorily or an individualistic nation will not be content. As time goes on, answers must be found. For instance, a highly trained surgeon would hardly be satisfied if he were given the same energy certificates as the coal heaver. So far, Technocrats have maintained silence on this matter, but we assume that a scientific method is being worked out.

Meanwhile, Technocrats continue their labors at Columbia University, supplied with housing by Nicholas Murray Butler because of the interest of Professor Walter Rautenstrauch, who is a member of the Technocrats.

COLLAPSE of ECONOMIC Machine is World-Wide



No nation has escaped the world-wide depression. Hunger kitchens in Austria, shelter houses in Japan, battle-scarred British Bobbies attacked by unemployed men they sought to evict, bread lines in Paris—these are but outward signs of the world-shaking shock the economic machine has suffered. History records other depressions, but none of such widespread effect.

Critics of Technocracy

SINCE Technocracy strikes at the capitalistic system in a way which has taken public interest by storm, it is to be expected that the capitalistic system should make an effort to defend itself.

Criticism number one: **Technocracy is old stuff rehased in new words.**

It is to be conceded by any student of economics that Technocracy is not a new idea, and nowhere do Technocrats make such claims. Books have been published from time to time which go into many angles now covered by Technocrats. "The Iron Man in Industry," a book by Arthur Pound, which was printed in 1922, put forth many of the arguments now expounded by Technocrats. "Paradox of Plenty" by Harper Leach, published last year, tells most of the story we are now hearing from the advocates of Technocracy and the same principles have been argued from Karl Marx on down. Mr. Pound writes in his book as follows:

"The war, with its insistent demand for quantity and its terrible drain upon labor power, immensely stimulated the development of the Iron Man (Machinery). Shifting the industrial function from the man to the machine produced and is still producing corresponding shifts in other fields of action. The balance of economic power was disturbed with consequent notable reactions toward society, precisely as the political structure of the globe shakes whenever the economic balance of power is upset."

This shifting of man-power from one industry to another as man-power is displaced by machines must obviously reach the point where there are no more fields in which a man can turn to find a new outlet for his energy.

If we have reached that period in our economic development, as Technocrats claim, then unemployment must necessarily increase instead of decrease until we find a few men manning machines and the vast majority vainly looking for work.

Some critics of Technocracy ask another question: If machines put men out of work,

who makes the machines that are responsible for unemployment? Technocrats reply that of course machines do not make themselves and that men must be employed to make the machines in the first place, but after the machines are put into operation, they last long enough to thoroughly disrupt the present labor plan. It is also true that there are machines which make machines, which in turn make other machines each unit in this chain thrusting more and more men out of work.

Technological unemployment, which merely means unemployment due to replacing man power with machines and is a phrase which has been in use for a number of years, cannot be explained away. It is a fact. Even in a world inundated with machines there must be some men to run them but Technocrats insist that we can divide up the duties of pushing buttons and give employment to every one.

Last Links of a Vicious Circle

DURING the development of the machine age, society was able to absorb most of the men thrown out of work by shuffling them into other lines of endeavor.

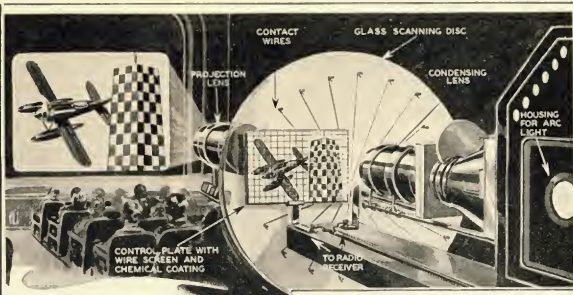
Moving into some other work, these men would find employment for a time but then another machine would come along and again cut down the number of employed.

These unemployed would have to go around and find some other job where machines to do the work had not yet been devised.

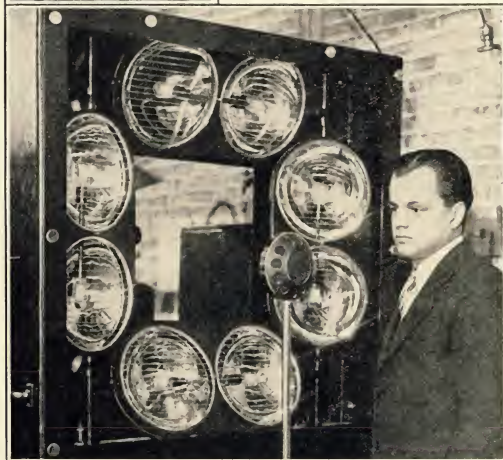
The rug weaver thrown out of work by the invention of the loom, which does the work of fifty men, might find a job in a cigarette factory, feeding a cigarette machine. Then the cigarette machine is improved until it doubles, triples, and quadruples its output and again he is out of a job.

Eventually other fields of endeavor are narrowed down to the point where they cannot absorb the man-power available. Technocrats say that this is the reason fourteen million are jobless now and millions more will be out of work by the end of this year. We have reached the last link in this vicious circle.

The Theater—Battle Front of TECHNOLOGY



Basic elements of a new television principle invented by C. Francis Jenkins, which makes it possible to project large-size television images on a screen, are shown in cut above. The moving scene is built up in the chemically coated plate by the brushes on the scanning disks. Below, O. Sanabria of Chicago with his televising apparatus which has succeeded in presenting pictures 10 feet square.



Unemployed musicians, ousted by the talkies, stand as a favorite example of technological unemployment. But bigger developments are in store for the theater, ranging from a device which accepts tokens in lieu of tickets, as shown in upper left corner, and so puts ticket printers out of work, to the imminent perfection of a television device which will project entertainment on your private screen at home and eliminate the theater. Stage hands, operators, entertainers find television threatening their jobs.

While America was a broad land of opportunity, the problem was not acute but in the last fifty years this country has been turned from a wilderness into a high state of development. There are no more free farms to be had for homesteading. The rush into territories for farms where farming was impossible subsided some years ago and the tide turned back into the cities.

Critics of Technocracy declare that the depression itself is not due to this **increase** in production but rather to an extraordinary **decline** in production. This is hardly a satisfactory retort from the viewpoint of a Technocrat.

Way back in 1886 the United States Commissioner of Labor said, "The rapid development of machinery has brought after what is commonly called 'over-production.'" Those who scoff at Technocracy quote the above statement as proof that we are not suffering from anything new and that fear of over-production has not been borne out. From time to time the cries of over-production have gone up and still we have managed to get along very well with our economic system.

Technocrats reply to this philosophy by saying we should not be obliged to suffer through booms and depressions and that a scientifically organized economic system would do away with sharp rises and declines in business, which upset the country and cause untold suffering. Instead of business reports showing peaks and chasms, under Technocracy it is claimed we would have a fairly uniform line in which production was controlled to suit demand and production would be sufficient to fill all the needs of humanity.

The movement is lauded in "Vanity Fair" which says, "Whether Technocracy is the final solution remains to be seen, but it is certainly the most vital movement in the direction of economical rationalization which is being contemplated in any country. Compared to Technocracy, Communism is a sentimental deification of the worker and Socialism is a romantic intellectual movement."

Time Magazine Asks "How"?

IN "Time" Magazine Technocracy is criticized for failing to explain how the price system is to be removed and the system of

energy certificates substituted. "Time" says: "How this transformation from dollar economy to energy certificates is to come about, Howard Scott never explains—says he at times: 'Technocracy proposes no solution.' At other times he silences questions with a pontifical belch."

In "The Business Week," we find Technocracy severely criticized for the statement that we have reached the point where man can no longer shift into new lines of endeavor. The publication points out:

"They say nothing about the constant demand for labor created by obsolescence of business methods, industrial processes, products, and equipment, under pressure of changing social standards of living, or the constant shift of workers from the mechanical industries to the service business—nothing except to condemn it all as wasteful of natural resources.

"They say nothing about the possibilities of raising standards of living and demand for industrial products in undeveloped countries, except to dismiss it as impossible because there is not energy enough available—a strange thing for engineers and scientists to say when they know that any day may see new sources of energy opened to exploitation.

"Finally, they say that whatever substitute is devised for the price-and-profit system, it must be one based upon scientific control, planned on a national scale and operated by technical experts. Human nature must have nothing to do with it; human desires, human behavior must not be allowed to interfere. It is too complex, too delicate, too speedy to be bothered by mere human beings. The law of physics must be the sole and supreme law of the land. The system of government must be designed by scientists and engineers, and administered by a kind of Technocratic Committee.

"What they will do about politics, fashion, fun, and other persistent human dispositions and frailties remains to be seen. Probably just ignore them."

In every publication and newspaper, it would seem, Technocracy is coming in for praise or blame and what the future holds remains to be seen and how Technocracy will answer its critics remains to be disclosed.

Where Are Our Jobs?

LAST winter the jobless were estimated at 10,000,000. This winter between four and five million more joined the ranks of the unemployed.

What happened to their jobs?

Technocrats place the blame on machinery. Others declare that unemployment is due to reactions of the World War and general economic conditions which will pass.

The question is—what actually has happened to the jobs?

Some scientists claim that the machine age has reached its point of maximum efficiency already and that the law of diminishing returns will prevent conditions becoming worse.

The law of diminishing returns has been studied by economists for many years and presents the theory that manufacturing enterprises and mass production cannot go beyond a certain point of efficiency. Beyond that point production slacks and efficiency is slowed up.

Dean Dexter S. Kimball, of Cornell, in a recent address before the American Association for the Advancement of Science declared that our modern industrial system is all right as it is but that it needs a "few tonic prescriptions." He believes in shortening the working week and in fostering new inventions which will absorb surplus labor, as the radio and automobile did, and that speculation be divorced from manufacturing.

Suppose, for example, that science discovers a bridge over the present barrier toward progress in finding a substitute for the present day airplane. As we all know, the airplane today has been a tremendous improvement over the early models and yet, in the final analysis, depends upon a gasoline engine to keep it aloft.

Engineers have been seeking a method of supplying energy to an airplane which will not involve so much weight and so much fuel as is required with a gasoline engine.

Airplanes using Diesel engines which burn crude oil have been successfully tried out but, here again, a mass of machinery must be supported in the air. The use of electricity for power does not prove feasible because there is

no efficient way of supplying current to the airplane when it is in flight.

Suppose that a method of projecting energy by means of rays could be found—the airplane could then be supported in flight with nothing but a converter to supply power to the propeller. Means of supplying a fool-proof airplane, which will have a thoroughly dependable power supply, light in weight and economical in operation may be found to revolutionize flying. Tremendous impetus would be given to aviation and **men crowded out of other work could enter a new industry.**

This is one reason why economists hold out no hope for the future without Technocracy, declaring that from time to time new inventions will come to our assistance. They point to the radio, the airplane, the movies and other inventions as an example of how industry keeps pace with the machine age by providing new jobs.

Technocrats challenge this statement, asserting that we are leaving too much to chance and that the only sure way to provide jobs for men displaced by machines is to divide up the work. How do we know something will turn up to occupy the jobless?

Those who criticize Technocracy's statistics on the downward trend of employment from 1919 to 1933 declare that 1919 was an unnatural year due to the great World-War and its attendant effect upon industries.

In 1914 the United States census shows 80.4 workers per thousand. In 1929 the number of employed per thousand was 83.9.

If the years 1914 to 1929 are used as examples of the trend of employment then it would appear that Technocrats are wrong in stating that employment is generally falling off year by year.

On the other hand, statistics do not present a reliable picture at all times because the effect of the World War might be felt from 1914 to 1919 just as strongly as it was felt in the year 1919. Certainly America was stimulated above normal during those years when foreign nations called strenuously for more and more production.

Technocracy As a Government

A GOVERNMENT of engineers is the phrase popularly applied to Technocracy.

To many, such a government by scientists fails to appeal. The human emotions and values of life are apt to be divorced from a system based on science, and we all fear the picture of a robot army directed by cold, impassionate technicians. Howard Scott, the prophet of Technocracy, explains the origin of the work in a manner that leaves us in little doubt as to the type of government it would involve.

"Technocracy will take its historic place on the list following Democracy, Monarchy, Autocracy, and the like," Scott asserts.

This sounds very much like "a soviet of technicians," declares Charles E. Merriam, professor of political science at the University of Chicago.

"They speak of Technocracy as a supplanter of Democracy," Professor Merriam said in a recent interview. "Democracy means government by a demo, or people, as Autocracy means rule by an Autocrat. Technocracy would mean rule by Technicians, it seems fair to assume, although they are vague in their definitions."

Government under the rule of Technicians or Technocrats is difficult to visualize because we have little to go on except the Russian experiments. Communism comes close to being a government of Technicians, but Communism is abhorrent to the Technocrat, just as it is to the Capitalist, because Communism retains the features which Technocracy would discard. Technocracy, for instance, has no use for the price system and would not limit individual earnings or wealth to a scale so low as the one found in Russia.

However, we have the picture of a group of technical experts directing the activities of a combined political and economic government. The question naturally rises who is going to select the group of Technocrats who would rule?

Certainly a group of Technocrats could not be selected by ordinary methods such as a popular election. Technocracy is indeed a far cry from the politician form of government but it is hard to find anyone who is at present unemployed voicing much enthusiasm for present political methods and present politicians. The man in the street is very apt to say, when he casts a vote, that he is forced to choose between the lesser of two evils rather than have a chance to cast a vote for an ideal system and an ideal man.

Technocrats admit that the problem of personnel is the most acute and so far have not suggested a means for selecting a personnel. It might mean a dictatorship of technical wizards or it might mean a decentralized government of scientists. Future revelations of the Technocrats may clear up this question.

A Rule of Scientists

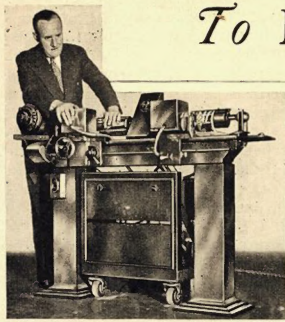
AT all events, there would have to be a group of men in control who, by means of statistics and graphs and all the intricate paraphernalia of science, would determine who was to work, and for how long, and for how much (measured in energy certificates), and this would be a colossal job.

Nothing is impossible, and even under our present cumbersome political system we can elect a president and count the votes in a day's time. The present system is certainly complicated considering the requirements of registration, etc., but Technocracy would call for an even more involved method of computing energy valuation of an individual and his rank in society as a unit in Technocracy.

Technocrats argue that at least we would be no worse off so far as complication of systems is concerned inasmuch as now we are supporting one person out of ten in a government, State, or municipal job.

Statistics show that every working man today devotes time amounting to a day and a

These Machines Spell "NO WORK" To MILLIONS of MEN



Three-color printing plates, which take 36 hours to produce by man-power, are turned out in 30 minutes by this electric machine.



Engineering brains which designed this machine which solves complicated mathematical problems are themselves likely to be thrown out of work by it when it takes over their jobs.



No more office secretaries? This device answers the telephone for you when you are out and announces the hour of your return.



Ships without captains! This mechanical navigator calculates a ship's position at sea.



Tractor-drawn combines which cut wheat, thresh it, and sack it for delivery have consigned a host of millions of "hired hands" to oblivion. In other days a man could always earn his primary necessities of food, shelter and clothing by the sweat of his brow during harvest time. The farmer who still depends on man-power must sell his crop in competition with low-cost machines.



half in each week to earn the money for his taxes.

At that rate, we work all Friday and part of Saturday to support our government, both State and Federal.

Technocracy would remove the necessity for so much taxation and place persons now devoted to politics in productive lines of endeavor.

The human problem in Technocracy will doubtless come in for the most criticism when a plan is finally presented in more detail.

Professor Merriam says, "One of the greatest obstacles in the adoption of efficiency, so-called in recent times, has been the failure to recognize fully the human element. It must be said in justice that this is not wholly the fault of the Technologists but all those adopting the new machines."

He points out that one of our great problems of government is the adaptation of Technocracy to human relations. "It is quite clear that government has not kept pace with the advance of science and that there is vast room for improvement," Professor Merriam declares. "Any new system must fit into existing systems of values and motions, ideals and sentiments that have grown up under the old systems."

Howard Scott denies that Technocracy involves dictatorship of Technicians, saying that it means government by science or social control through the power of technique. These words do not clear up the controversy since it is self-evident that Technocracy involves technical rule and only a Technocrat would be competent to supply such rule.

Better Days Ahead

THE Technocrats firmly believe that a new era of prosperity and plenty is in view.

By adopting all the resources of machinery instead of fearing machinery and the consequences of technological unemployment, we should look forward to an age of unprecedented leisure and abundance for everyone.

"Technocracy points out that this continent has no cause for gloom," declares Howard Scott, "or fear of chaos, but that we must face the inconvenience of change—that this continent today stands on the threshold of a new era of well-being, that is to say, a more efficient conversion of available energy, and an increase in total energy converted, which makes possible an increased standard of living. The high road to this new era can be one of orderly progression under Technological control."

Writing in the Chicago Daily Tribune, Arthur Evans upholds the capitalistic system and quotes Professor William F. Ogburn of the University of Chicago as saying:

"I see no such collapse of the capitalistic system as they (Technocrats) set forth. It has displayed weaknesses, particularly the flow of money and credit is a present weak spot in the economic organization—it was thrown out of gear by the war. Then, also, the flow of capacity to purchase should keep pace with the capacity to produce. These are two present weak spots. But the economic organization is a fairly tough one, and there is no reason to fear collapse.

"Mechanical inventions move forward faster than social inventions and the only thing is to step up social inventions to bring about adjustments."

To the observer this does not appear to denounce the theory of Technocracy but rather indicates that there is a need for some new adjustment and that the economist recognizes such a need.

E. H. H. Holman, St. Paul economist, declares, "I personally believe that the best system for establishing prices would be one based on labor hours. By that I mean the actual amount of time required to produce a commodity."

Mr. Holman's suggestion can be seen to have points in common with the energy valuation suggested by Howard Scott.

At all events, the purpose of Technocracy at this time appears to be to sound an optimistic note for the future provided steps are taken to work out a gradual substitution for the present economic system.

The picture painted by Technocrats, showing the Technocracy of the future, is indeed rosy. Whether Technocracy is adopted or not, it is apparent that the time will eventually arrive when all physical wants of a population are supplied on standards of living never before approached in any civilized country.

Our government income taxes which impose colossal collections from million dollar incomes indicates how far we have progressed in the present order of things towards the restriction of concentrated wealth.

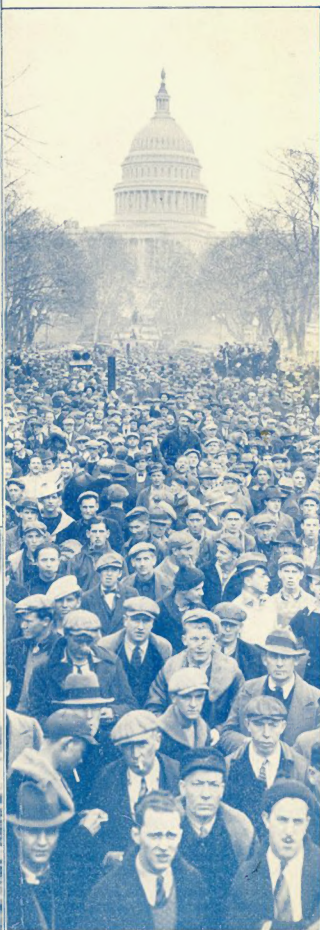
We are working towards shorter hours of labor and corresponding increase in leisure with each decade finding great advances made in this direction. Technocracy is not intended, as a sudden abrupt overthrowing of existing order but is rather projected as a means of gradually supplanting outworn systems.

Battling the Specter of No Work, No Food, No Money

The March on Washington



Tear gas was used to break up the riot at McKeesport, Pa., shown above, when police were called to disperse a mob of unemployed whose threats of direct action, involving a march on the council hall, made their activities a dangerous threat to the peace of the community. On a larger or smaller scale, such scenes have been duplicated in practically every large industrial community of the country.



Marching as to war—soldiers of the army using tear gas to disperse members of the Bonus army which flocked to the capital demanding immediate cash payment of the World War Bonus to save themselves and their families from imminent starvation. At right, part of the army of 10,000 jobless men from Pennsylvania who marched on Washington, led by Rev. James B. Cox.

CAN TECHNOCRACY PREVENT THIS?

